

## LETTERS FROM GRANDPA

# 306

Dearest grandchild,

In a museum in Istanbul is an ancient Sumerian cuneiform tablet which is believed to be the oldest love poem ever found. To the untrained eye those wedge shaped marks are meaningless. They are, in fact, a language expressing love. That beautiful poem is thought to have been composed by the bride of Shu-Sin, the third dynasty king of Ur. In this brief letter we will attempt to show that mathematics is also a language. It was, of course, given to us by God. The universe expresses such rhyme and meter that it is called in Scripture a “poema”. In Rom. 1:20 we are told that God’s eternal power and divine nature are revealed by what He has “made”. (That is to say, his “poema” or “poem”)

Galileo Galilei was an Italian mathematician. He was born Feb. 15, 1564 and died Jan. 8, 1642. He was also an astronomer, physicist, and engineer. He has been called “the father of observational astronomy”, “the father of modern physics”, “the father of the scientific method”, and “the father of modern science”. He was also a devout Christian who said: “*God is known by nature in his works, and by doctrine in his revealed word.*” To the untrained eye the universe is meaningless. In 1936 *Physics and Reality* quoted Albert Einstein as saying: “*The most incomprehensible thing about the universe is that it is comprehensible*”. In other words, like a language the universe can be understood. Galileo considered mathematics as the language to understand it. His precise words were: “*The universe cannot be read until we have learnt the language and become familiar with the characters in which it is written. It is written in mathematical language, and the letters are triangles, circles and other geometrical figures, without which means it is humanly impossible to comprehend a single word.*”

In 1687 Sir Isaac Newton published his *Principia Mathematica* in which he outlined the laws of gravity and motion. His dear friend Edmond Halley, used this information in 1705 to calculate the affect of Jupiter and Saturn on cometary orbits. Understanding this “language” enabled Halley to predict the appearance of a special comet in 1758. Today that comet is known as “Halley’s Comet”.

On July 20, 1969 Neil Armstrong and Buzz Aldrin landed the Apollo 11 lunar module on the moon. Understanding the language of mathematics made this incredible achievement possible.

In 2018, NASA successfully landed the InSight lander on the surface of Mars. Mars is the fourth planet from the Sun and the second-smallest planet in the Solar System. The average distance of Mars from the earth is 140 million miles. Mars is traveling at an average speed of 53,979 miles per hour in it’s orbit about the sun. Landing on such a fast moving target 140 million miles away is not easy. It would never had been possible without understanding the “language of mathematics”.

Eugene Paul Wigner earned the Nobel Prize in Physics 1963 for his “contributions to the theory of the atomic nucleus and the elementary particles, particularly through the discovery and application of fundamental symmetry principles”. Wigner wrote: “*It is difficult to avoid the impression that a miracle confronts us here, quite comparable in its striking nature to the miracle that the human mind can string a thousand arguments together without getting itself into contradictions, or to the two miracles of the existence of laws of nature and of the human mind’s capacity to them...The miracle of the appropriateness of the language of mathematics for the formulation of the laws of physics is a wonderful gift which we neither understand nor deserve.*”

In 1960, near the end of his life, Wigner published a now classic article on the philosophy of mathematics and physics. It has become his best-known work outside of technical mathematics and physics. It is called "*The Unreasonable Effectiveness of Mathematics in the Natural Sciences*". He argues that biology and cognition could be the origin of physical concepts, as we humans perceive them, and that the happy coincidence that mathematics and physics were so well matched, seemed to be "unreasonable" and hard to explain. To us, of course, the simple explanation is God!

Man's ability to use language is unique. Yes, lower creatures can communicate at some basic levels. Mustache bats, for example, emit some 33 different sounds to communicate to other bats in the dark. Dolphins can hear one another up to 6 miles away. Bees can dance to tell other bees where to find food. A mother hen can call her chicks to take refuge under her wings. Cornell University began an Elephant Listening Project in 1999. They have recorded sounds for 20 years and hope some day to produce an elephant dictionary. By comparison, Wikipedia reports that the pro-version of the Finnish Dictionary already has 800,000 words. There is obviously a dramatic difference between animals and men. Dolphins do not construct hospitals and train brain surgeons. Elephants do not built space ships. Bees do not write dictionaries and an ape cannot compose a treatise on God. Man is unique!

The cuneiform poem in Istanbul's museum did not occur by accident. It came from a mind! The poem of our universe did not happen by accident either. It also came from a mind. Truly: **"The heavens declare the glory of God; the skies proclaim the work of his hands" (Ps. 19:1).**

I love you,

Grandpa Boyce